Faller Car System Conversion – Part I

- Preparing the Body
- Installing the Motor

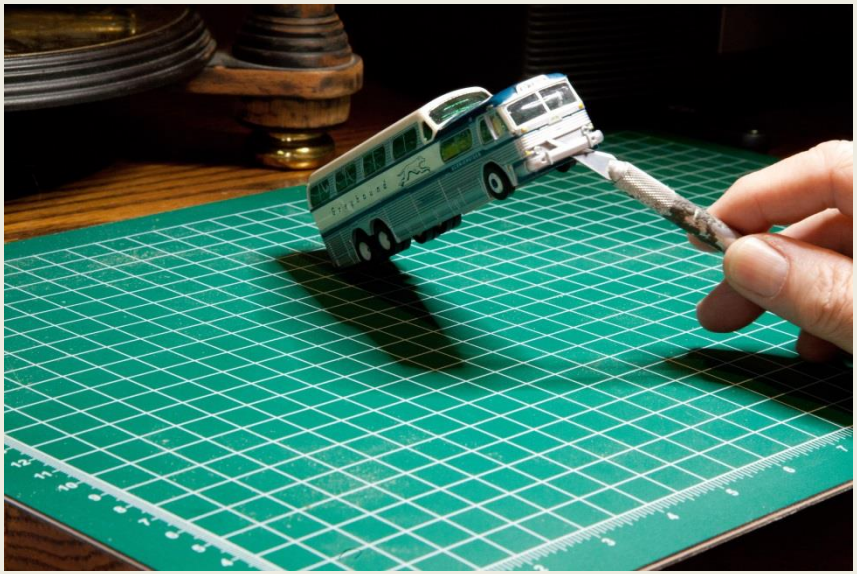
Greyhound Bus
Conversion to Faller Car

Preparing the Chassis for Steering, Motor, ON/Off Switch & Power Port

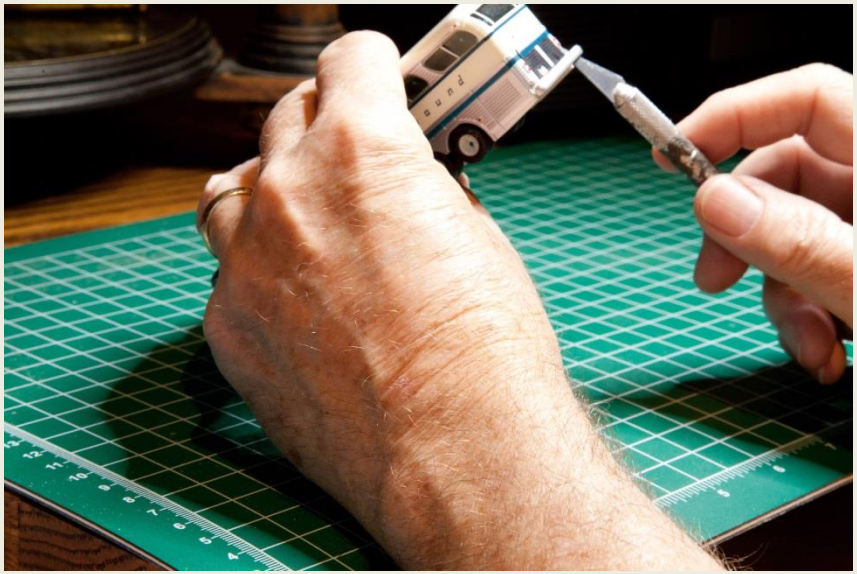
SECTION ONE

Prepare to Open Up Bus

Remove Front Bumper



Remove Rear Bumper



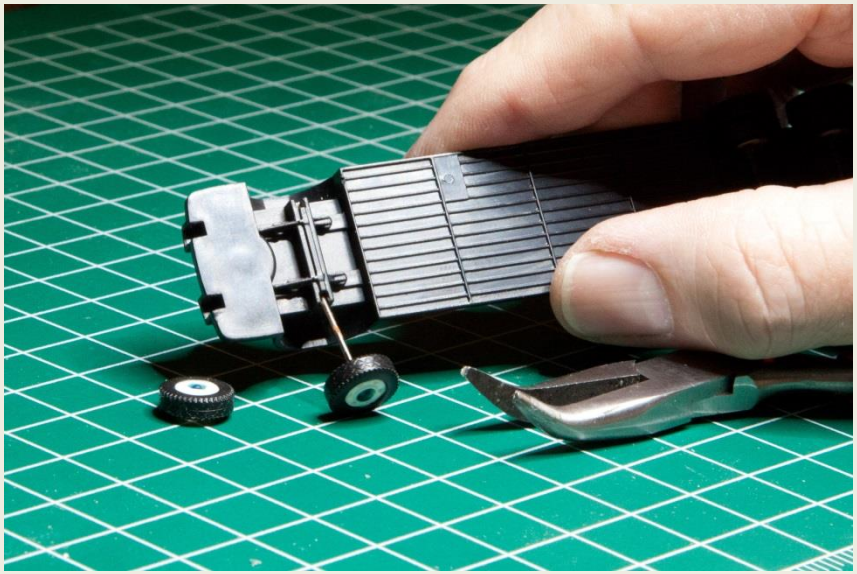
Separate Body from Chassis

Open from Front End First

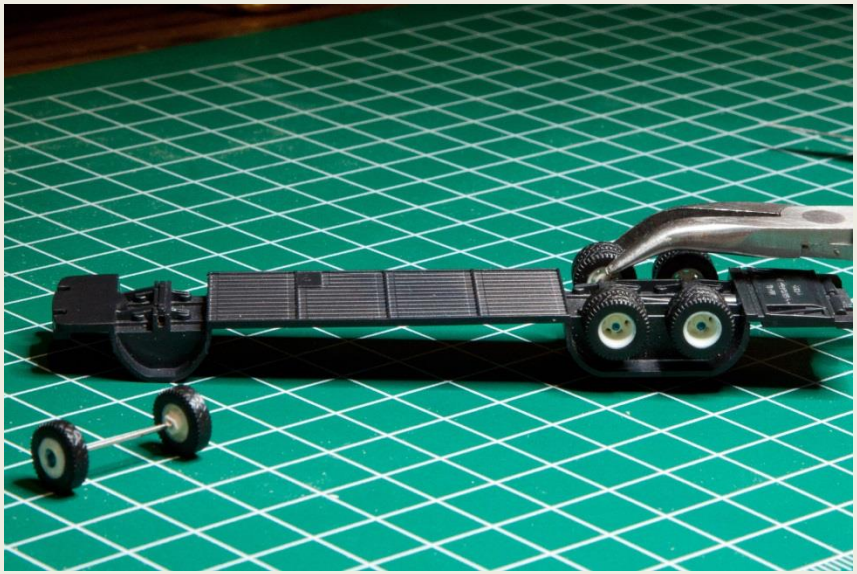
Slide Rear End out of Shell

Preparing Chassis Mod

Remove Axle & One Front Wheel --
Do Not Twist Wheel to Remove it!

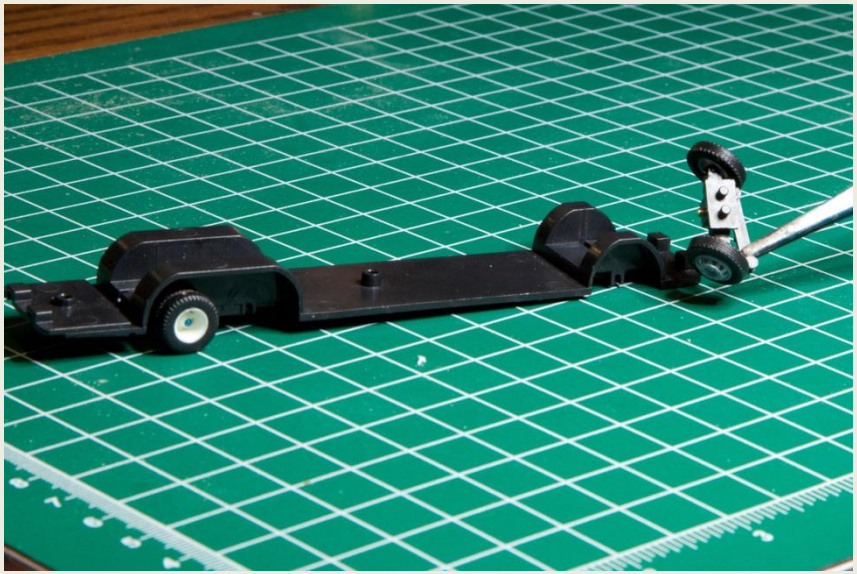


Ditto with Forward Axle



Modifying Front Axle

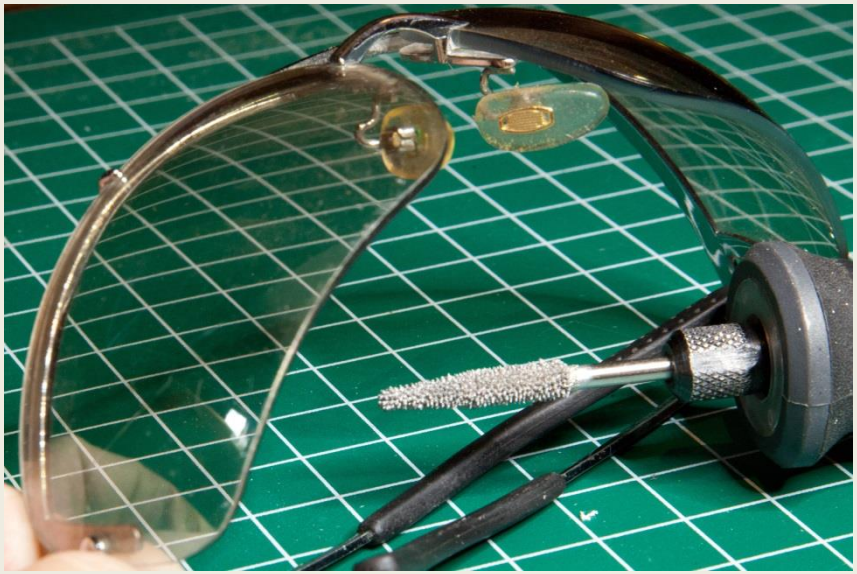
Making Room for New Steering



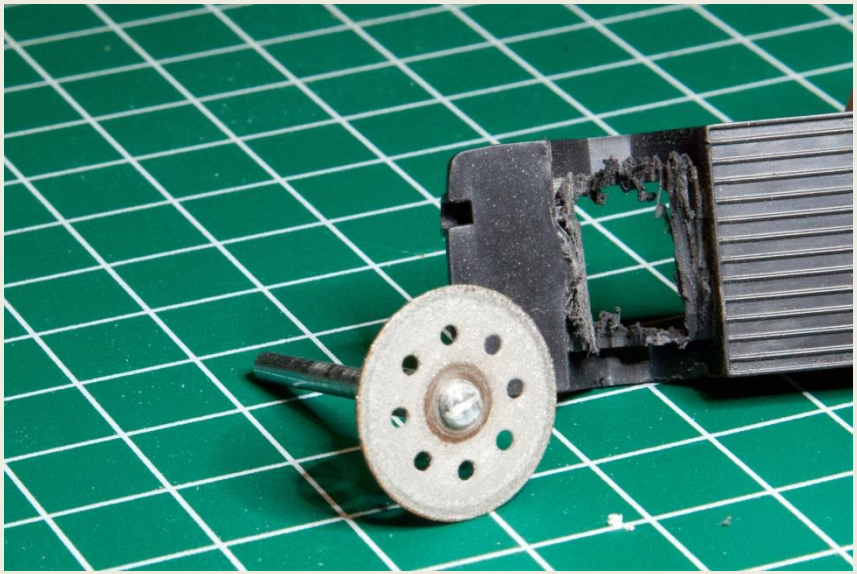
Remove This Area

Next Use Dremel & Cutoff Wheel

Keep Debris Out of Your Eyes

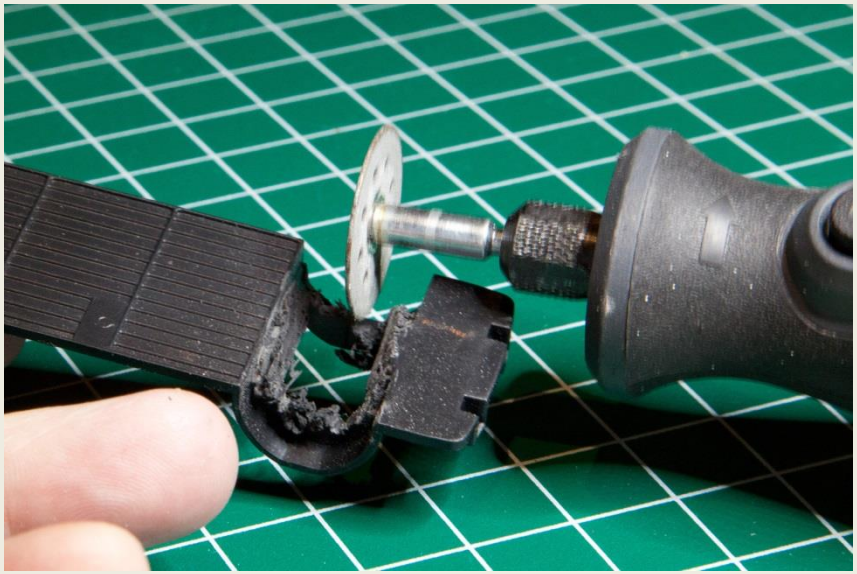


Small Cutoff – 13/16 “ Dia.

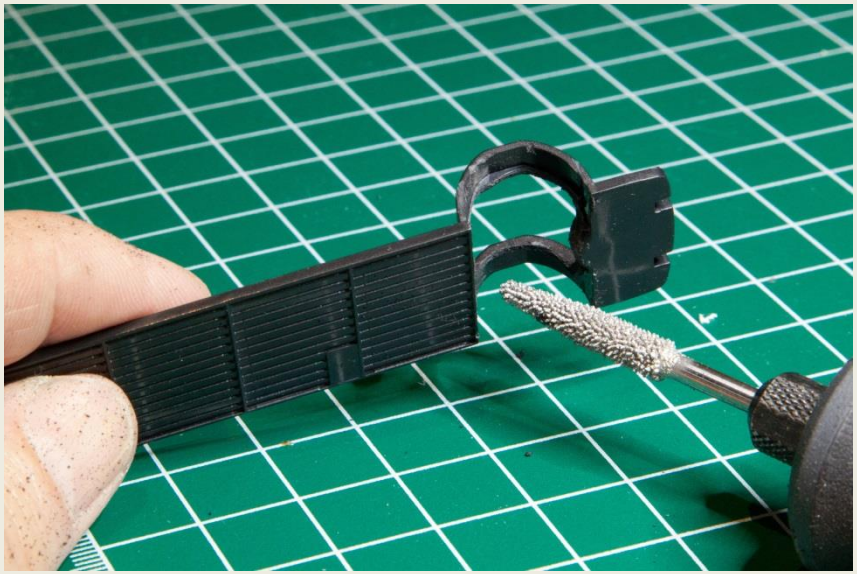


Cut Away Axle Groove

Do Not Remove Fenders

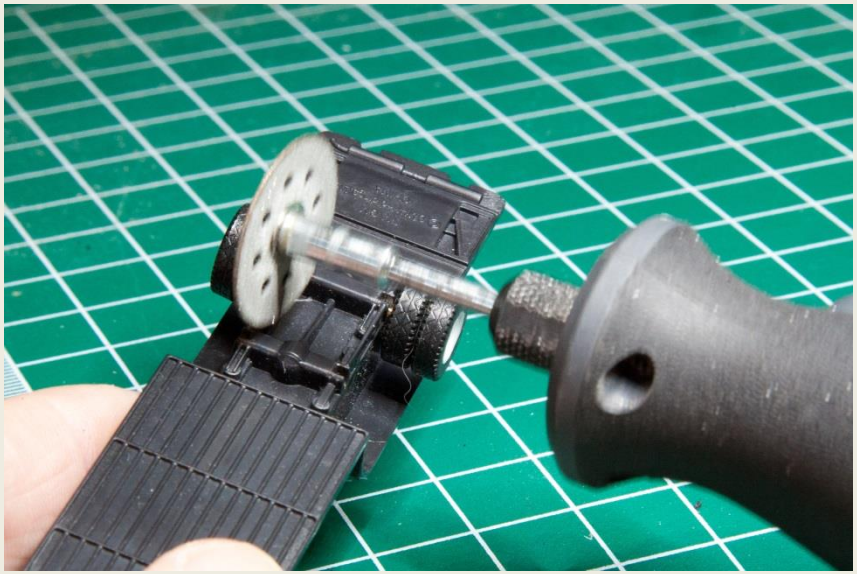


Clean up with 9931 Tungsten Bit

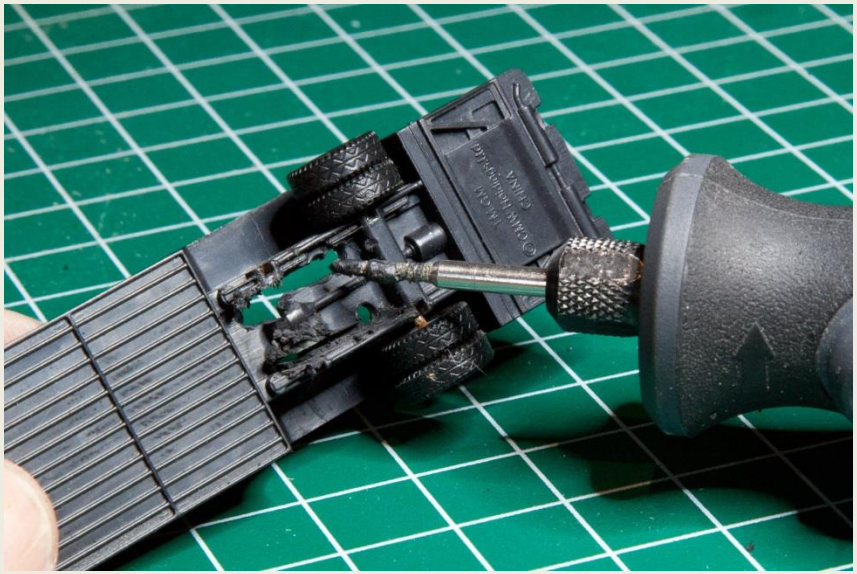


Now Remove Forward Most Rear Axle Flooring – Not the Axle Groove in the Fender Sidewall.

Cut on the Inside of Leaf Springs

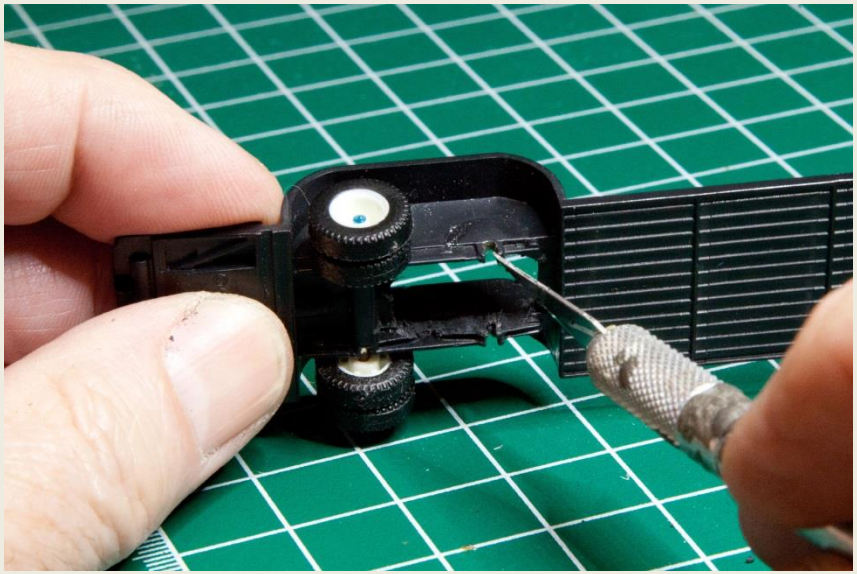


Carefully Remove Floor

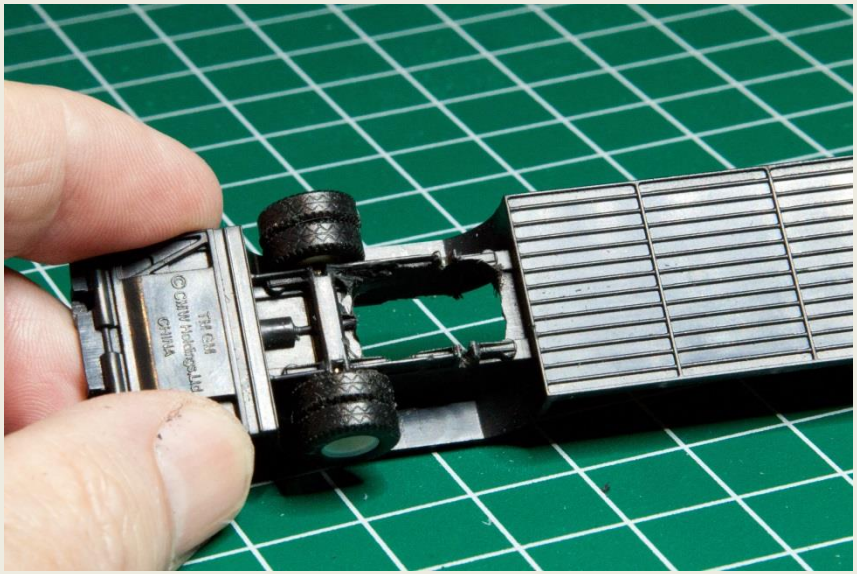


Making Room for the Motor/Gear/Axle

Leave Fender Walls In Place

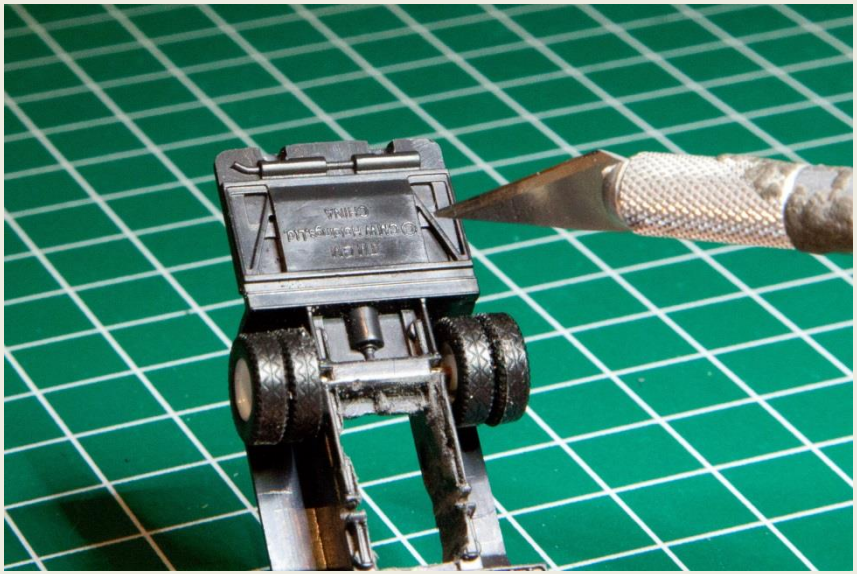


Cleaned Up Opening with a File

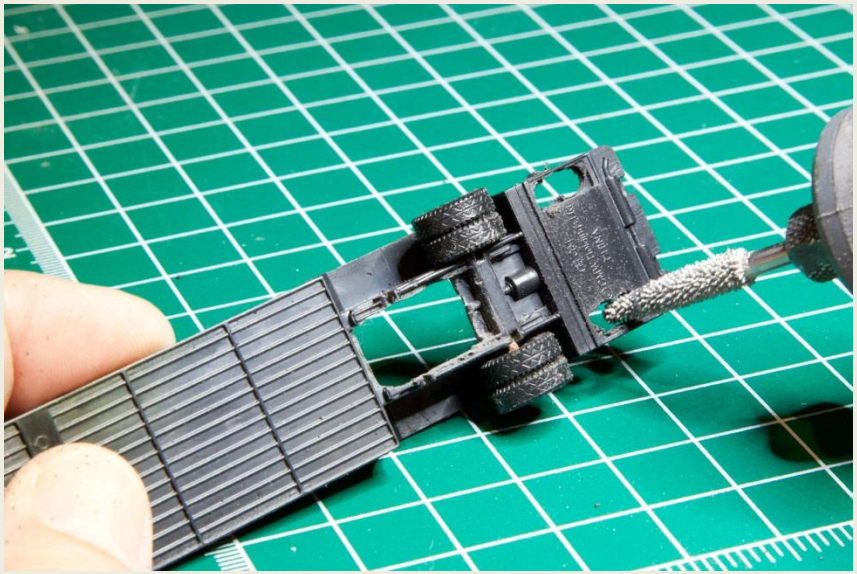


Adding Charger & On/Off Switch

On/Off Switch Goes Here

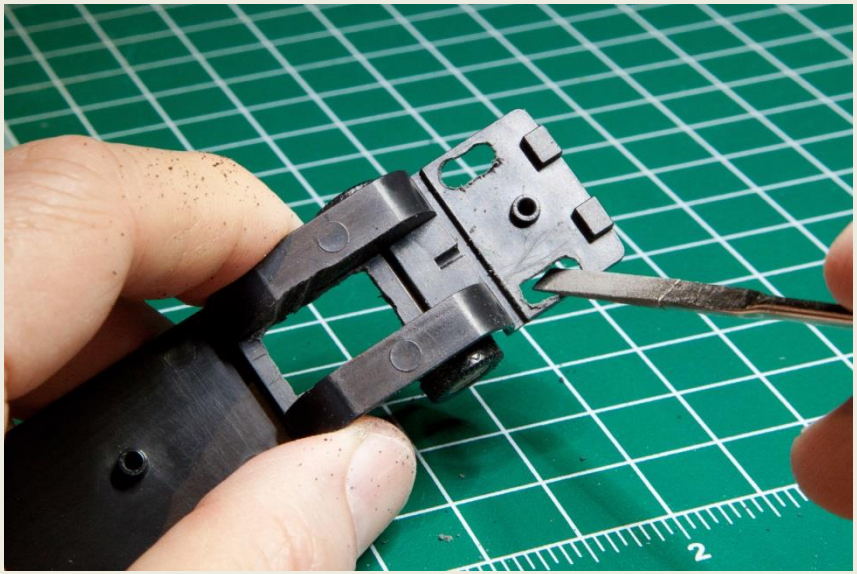


Carefully Remove Flooring

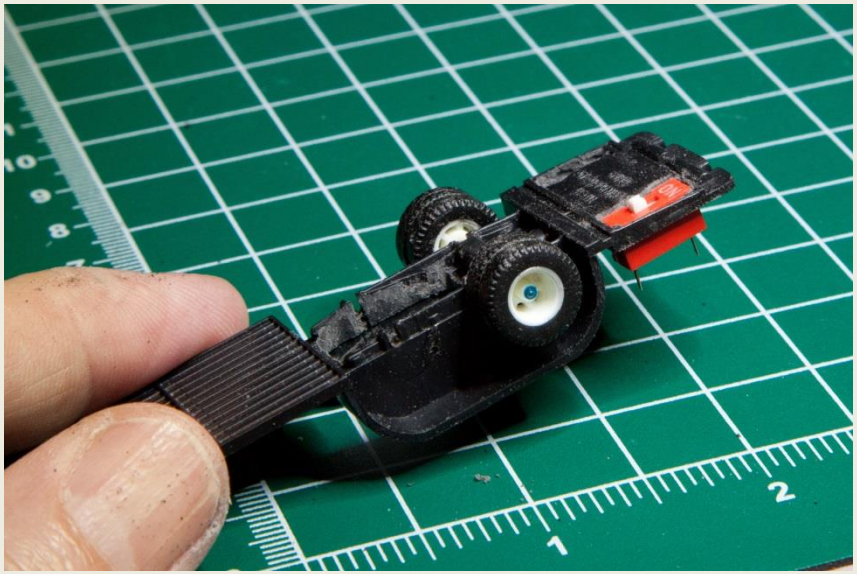


On/Off Switch

Use File to Square Opening

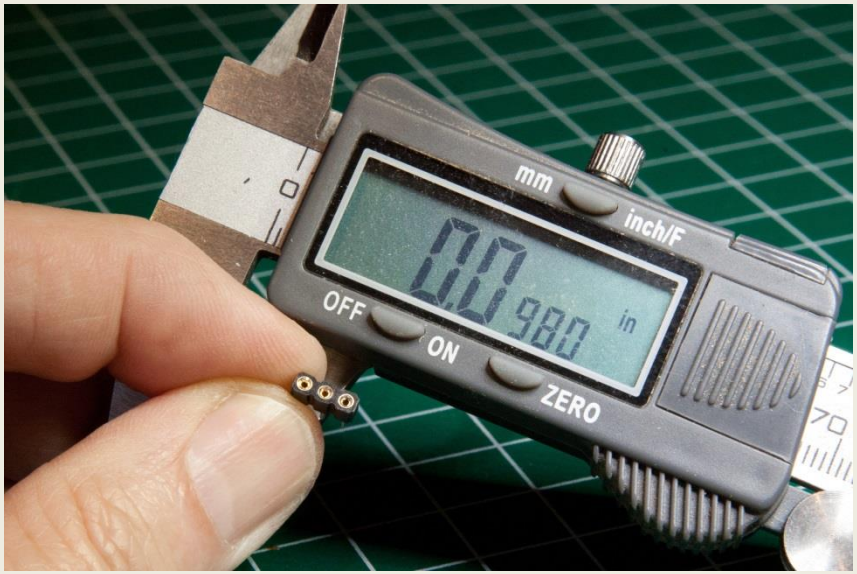


Dry Fit the Switch

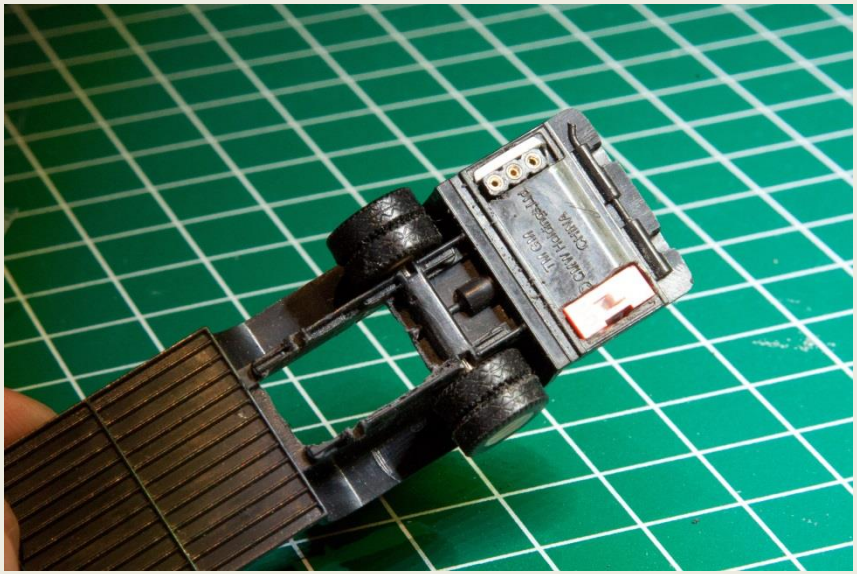


Dry Fit Charging Port

.0980 Inch Opening



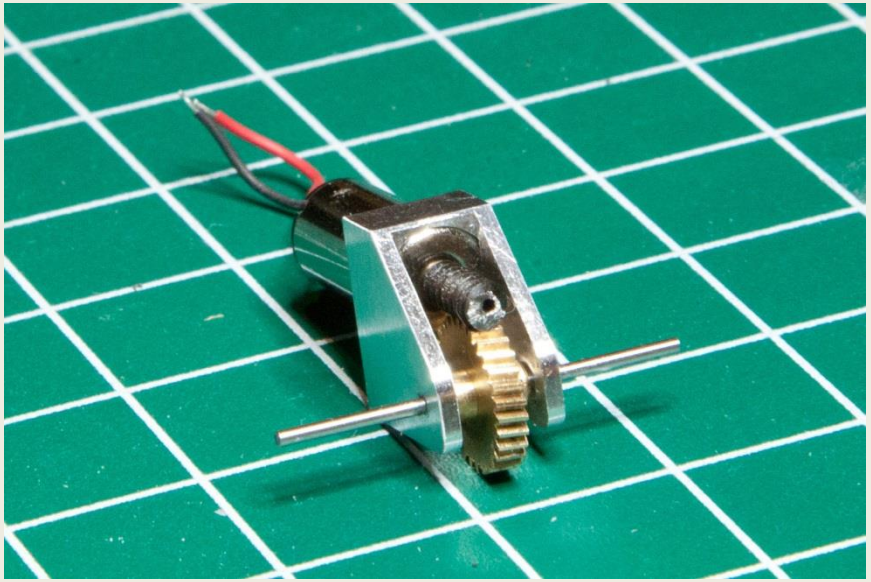
Opening was Too Big --- Shim Added to Close It Up



Instructions

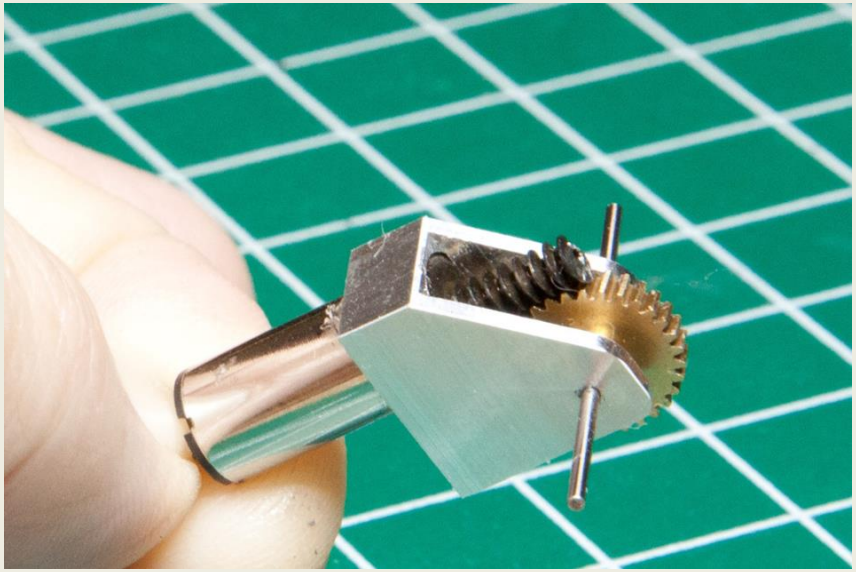
1. **Remove Wheels by pulling straight out --- DO NOT twist wheels to remove.**
2. **Front End --- Leaving the fenders, cut away flooring and side walls of the wheel well. Sand and file smooth.**
3. **Rear End --- Do not remove the side walls but cut away the flooring under the forward most axle. Cut just inside the leaf springs. Leave about 1/16 of an inch of the flooring behind the latticed main body floor and 1/16 forward of the rear most axle. Sand and file smooth.**
4. **Back of the bus --- carefully open up the floor for the ON/OFF switch and the power port. Use a file to square the openings and fine tune the fit. Dry fit the switch and power port.**

Creating the Motor/Gear/Axle Housing



SECTION TWO

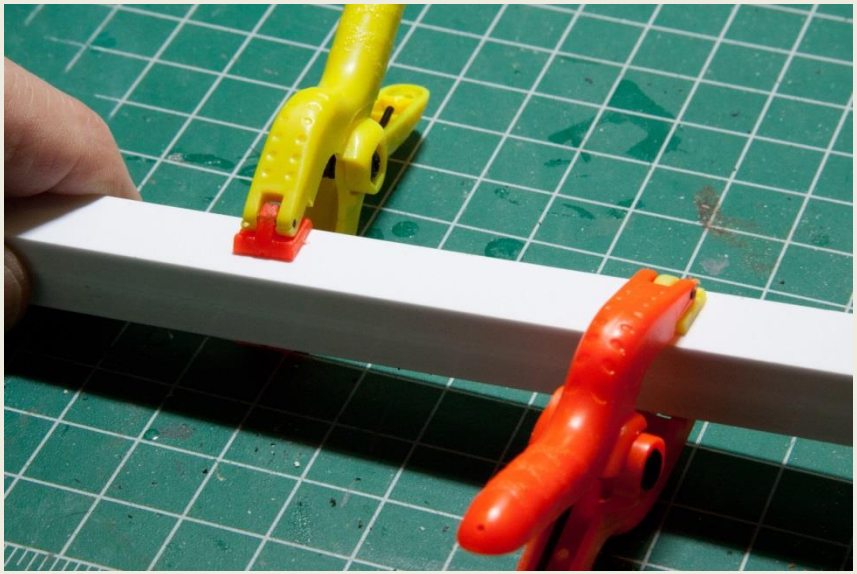
Building the Motor/Gear/Axle Housing



Creating a ½” Square Stock

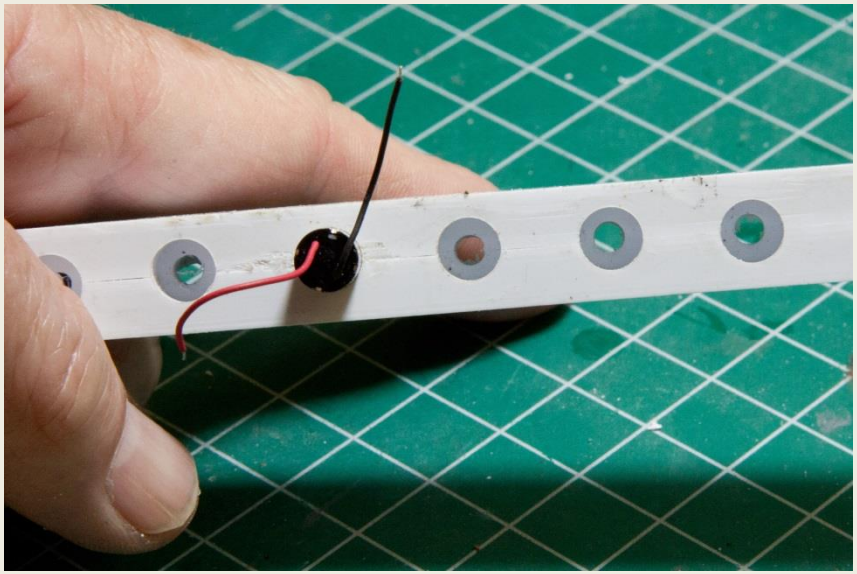
Ever Green .500 by .250 Styrene
Glue with Methal Ethal Keytone

Clamp and Let Dry

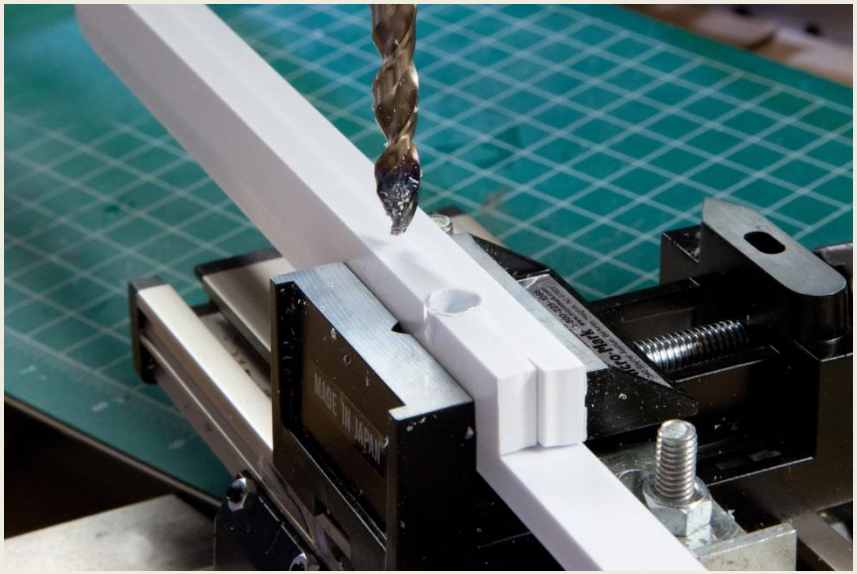


Drilling Holes for Motor

First, Drill 5/32 Worm Gear Hole Centered Through the Glue Weld Seam

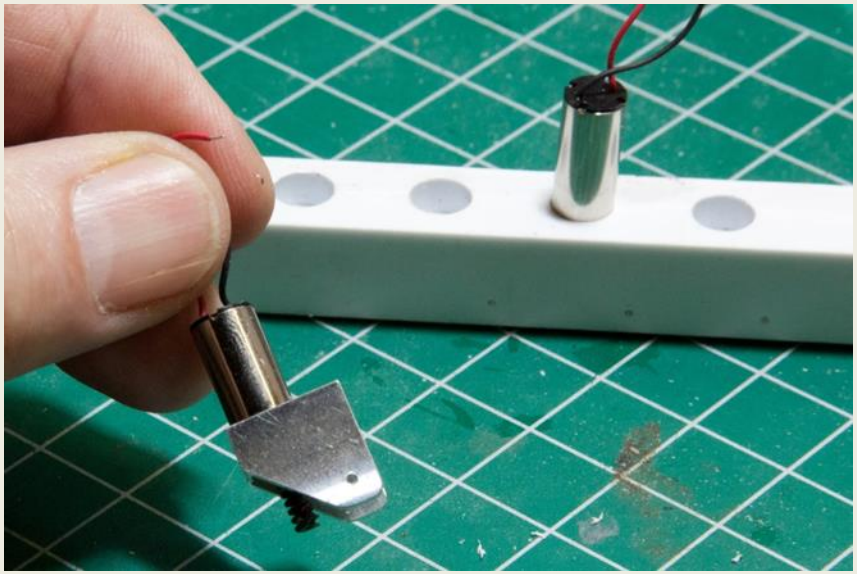


Then, Drill 9/32 (7 mm) Motor Hole, .20” deep



Preparing to Cut the Stock

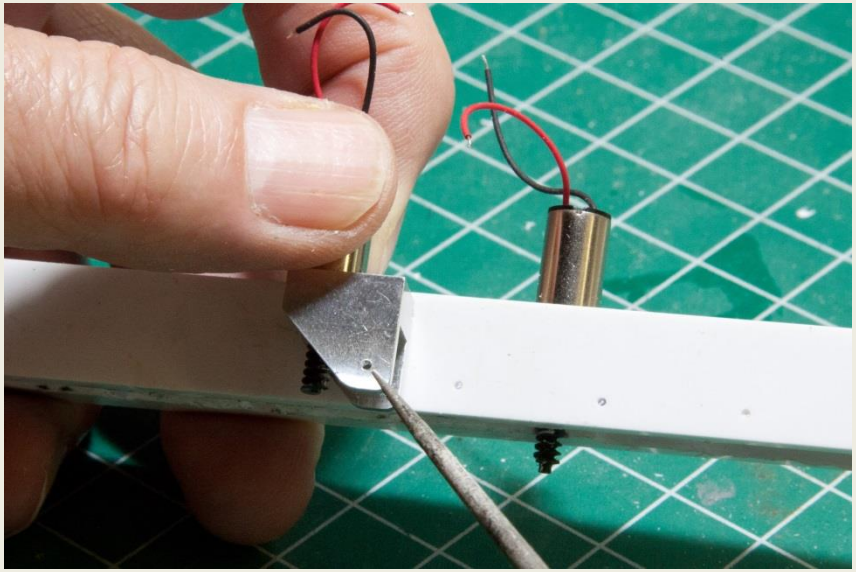
Using Aluminum Frame as a Template

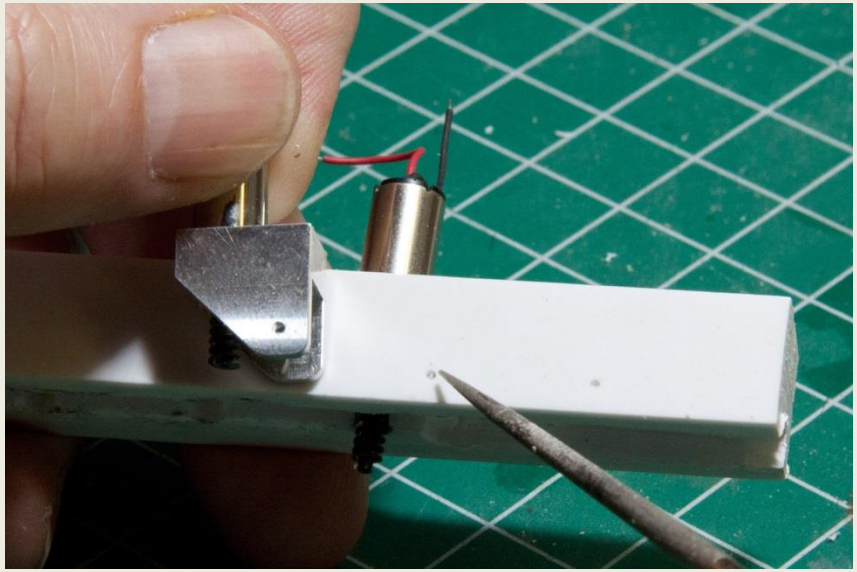


Template

- Using the Aluminum Milled Housing (with the axle and axle gear removed but motor still mounted) as a template, align the motor in the piece with the motor in the aluminum. Then using a 1 mm drill bit (#60) in a pin vise, drill the proper location of the axle in the piece. (see following photos)

These are the Axle Holes

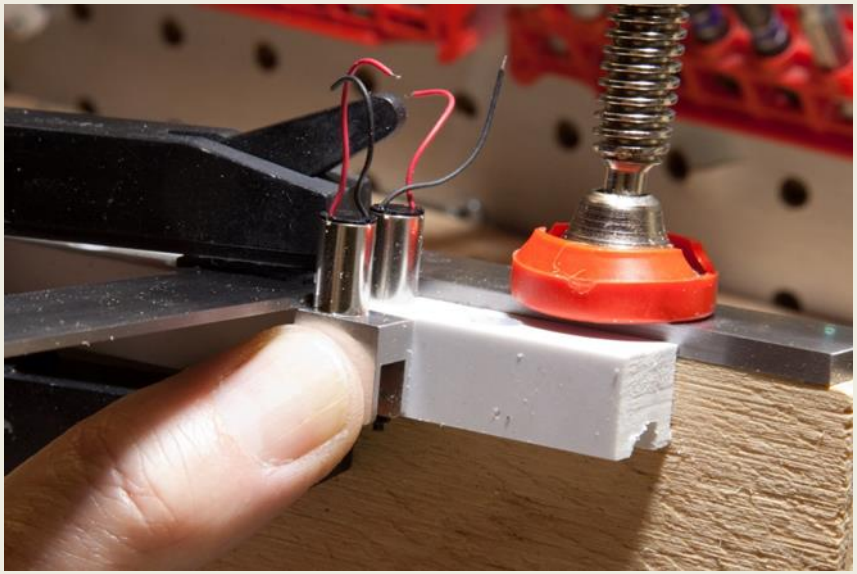




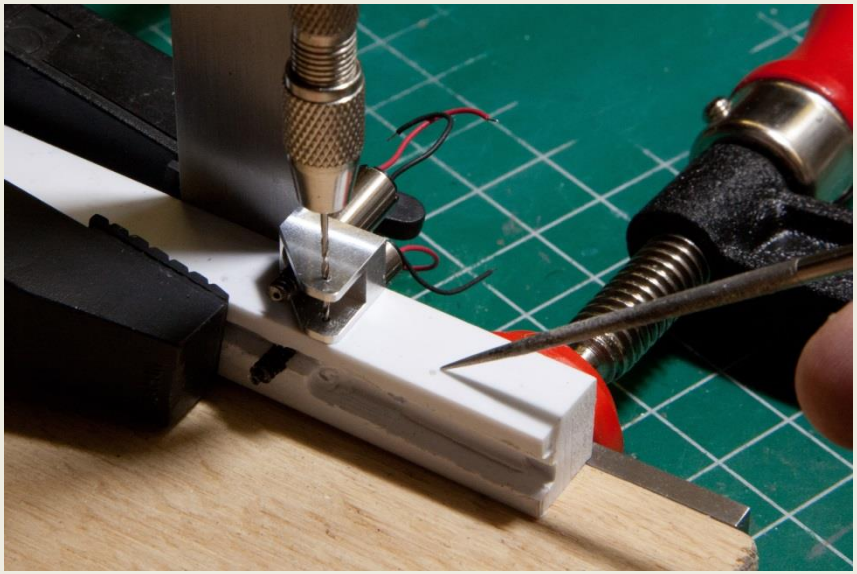
Setting Up a Jig: Clamp a Square to a block of wood then clamp the piece to the top as in the right hand photo.

Aligning the template with the piece

Aligning the Motors Using a Square

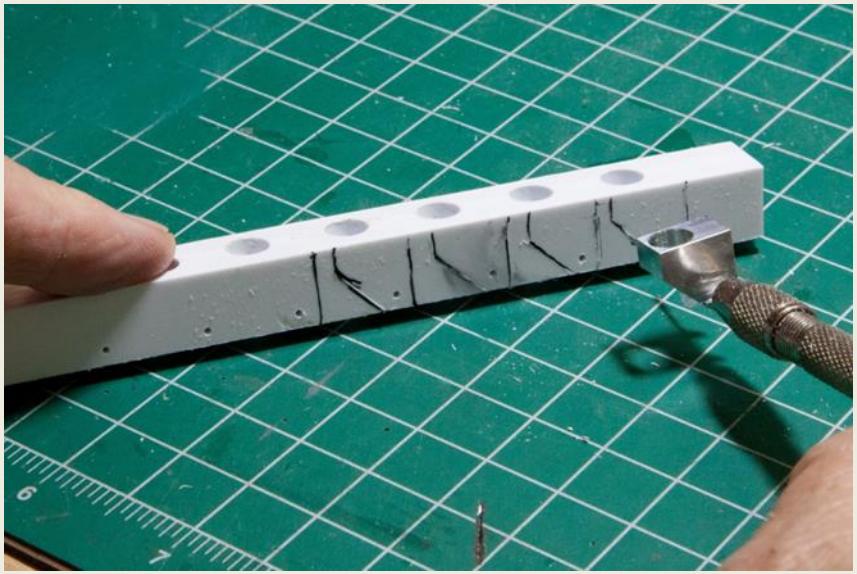


1 mm (#60) bit drilling the new axle holes



Drawing Cut Marks

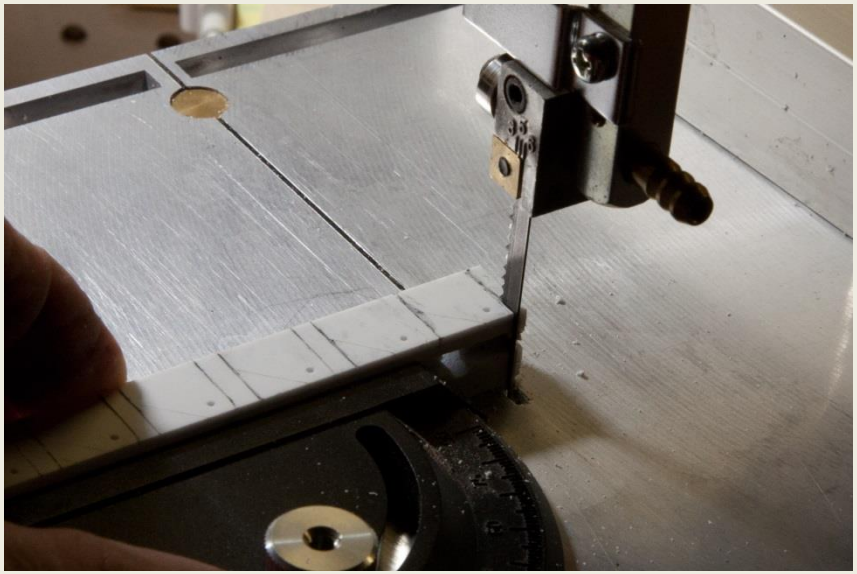
Using the Pin Vice, Align the Aluminum Template to the Piece



Mark the Shape of the Template

Cutting the Piece

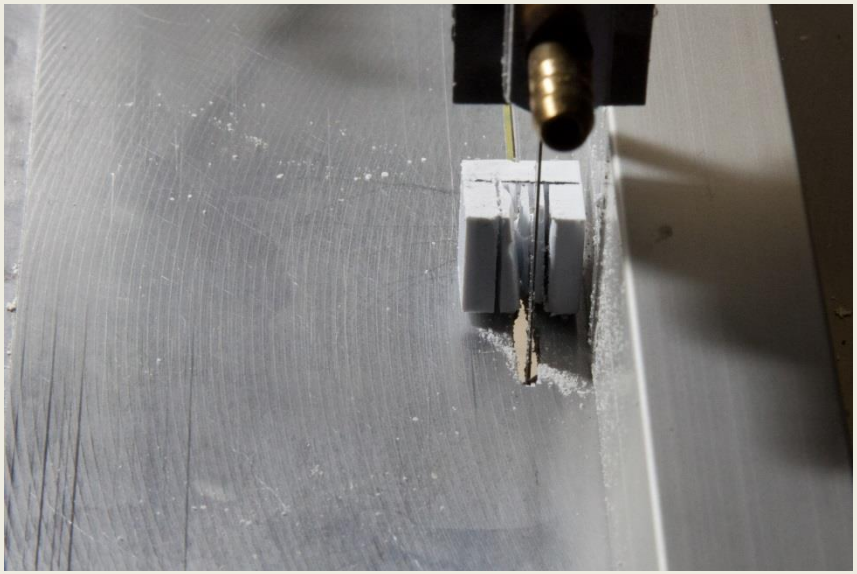
Using a Mini Band Saw or



Using a Mini Saw

Once the Pieces are Separated

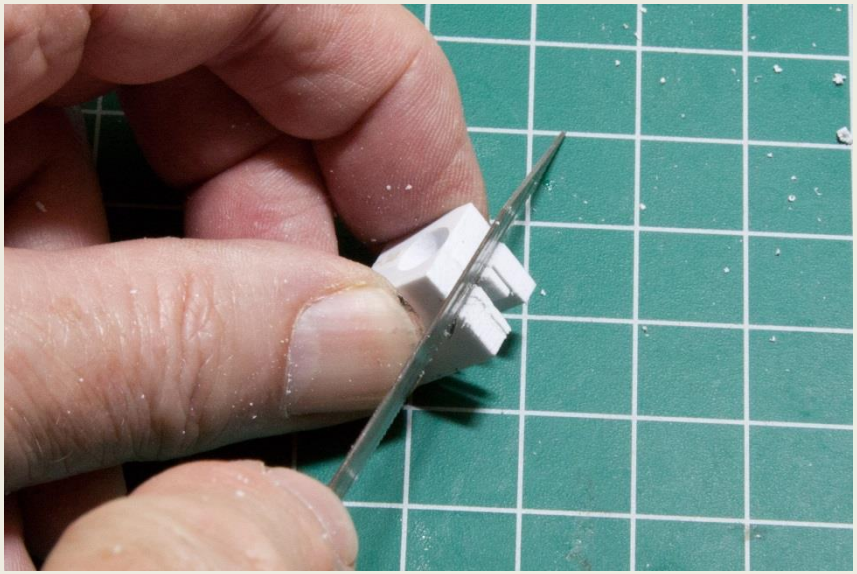
Hollow Out the Center for the Worm and Axle Gear

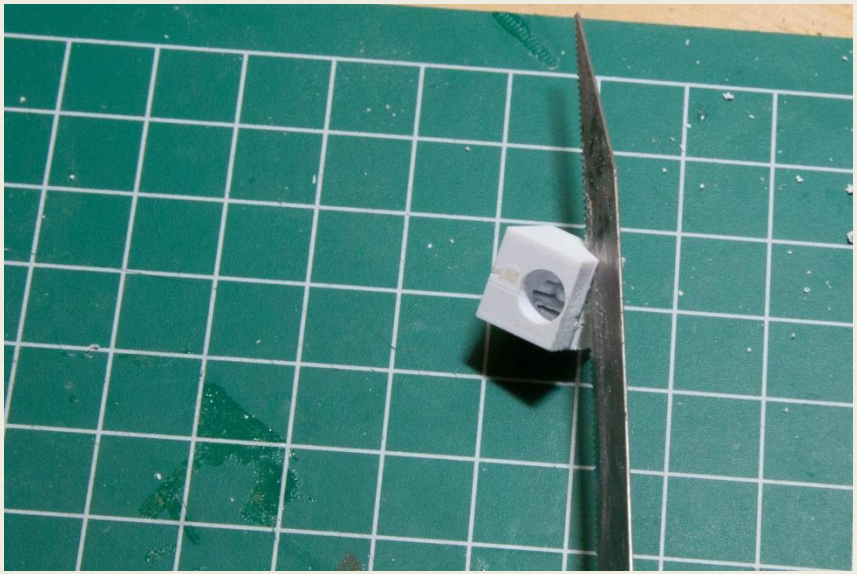


Using a Saw, make Several Cuts to Facilitate Removal of the Excess Styrene

Adding the Angle Cut

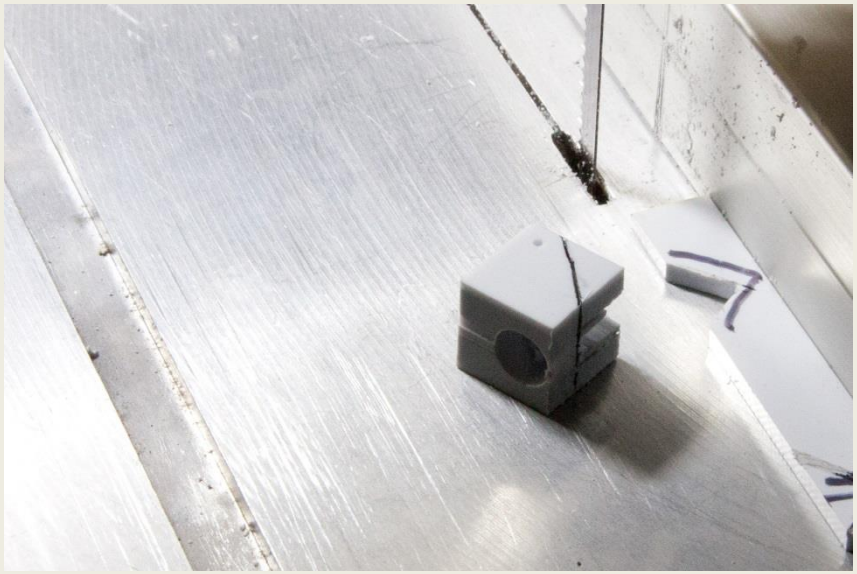
Using a Hand Saw



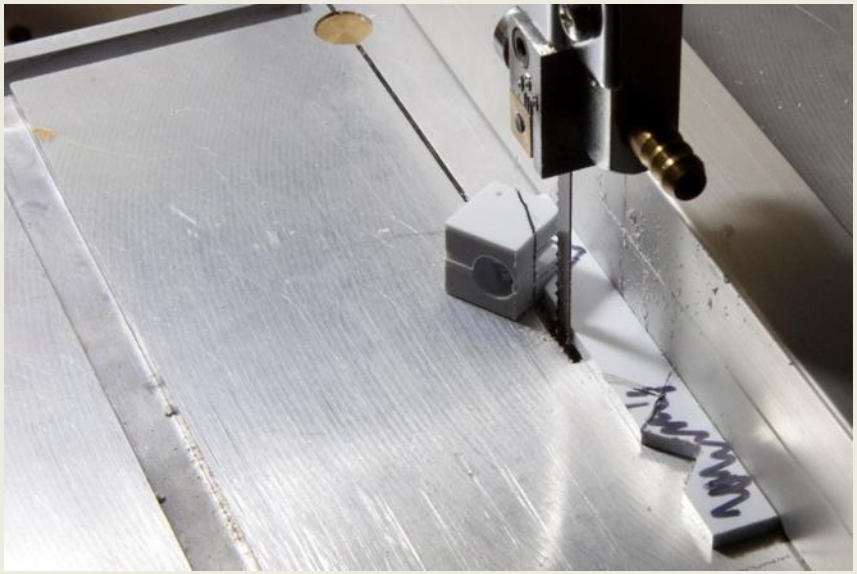


Using the Band Saw to Cut the Angle

Making a Jig for the Cut



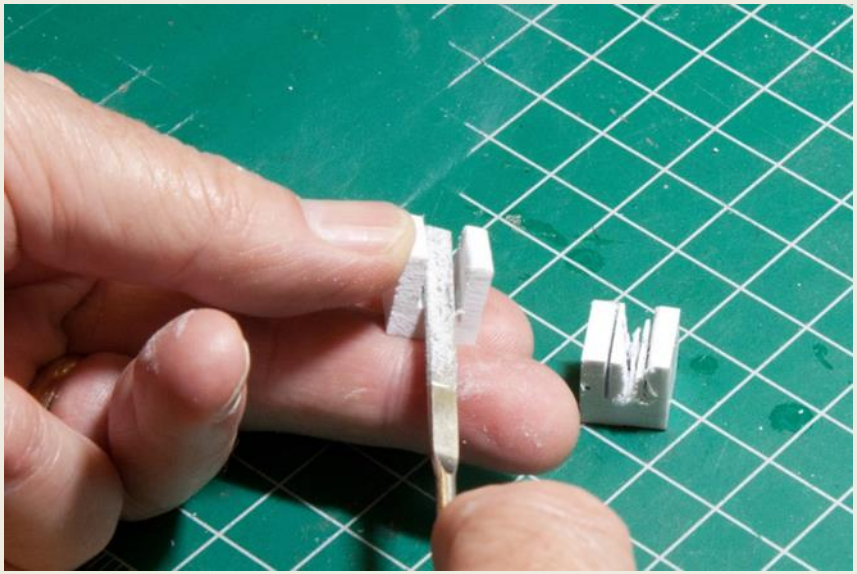
Cutting the Piece



Hollowing Out the Center

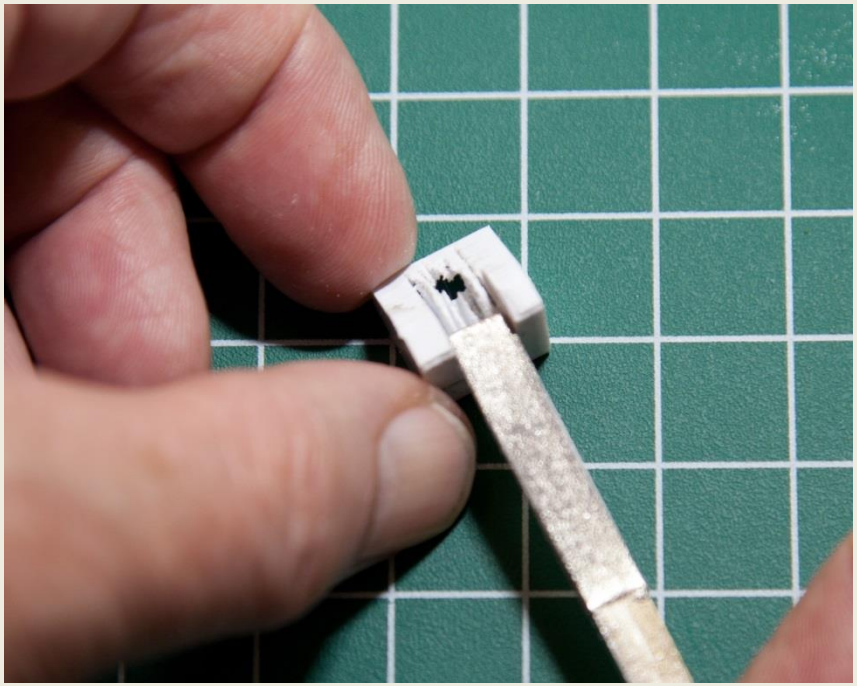
Use a #11 Blade to Remove the Styrene Slices

Then File Smooth

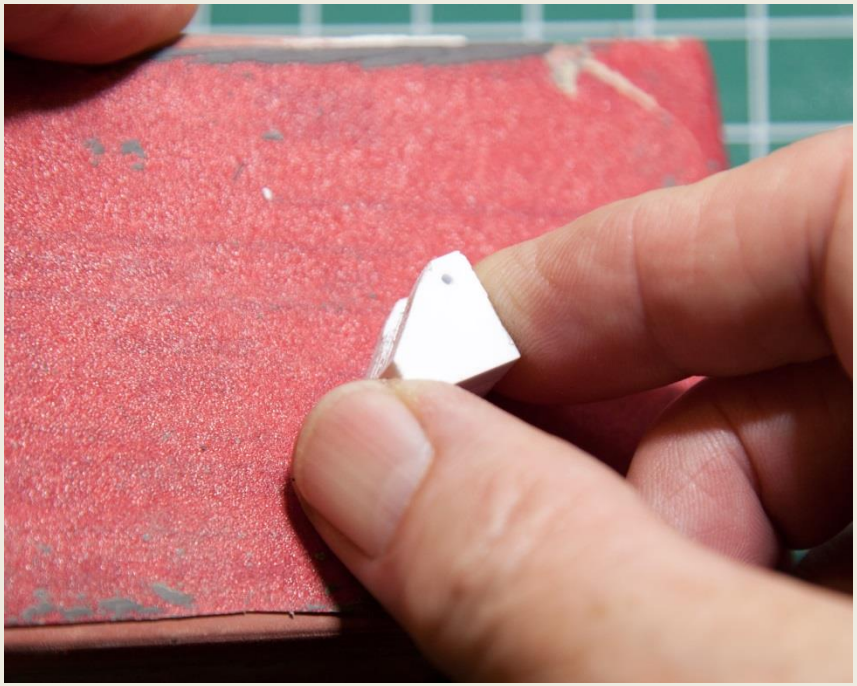


Sanding Styrene Motor Frame

File Removes Grooves



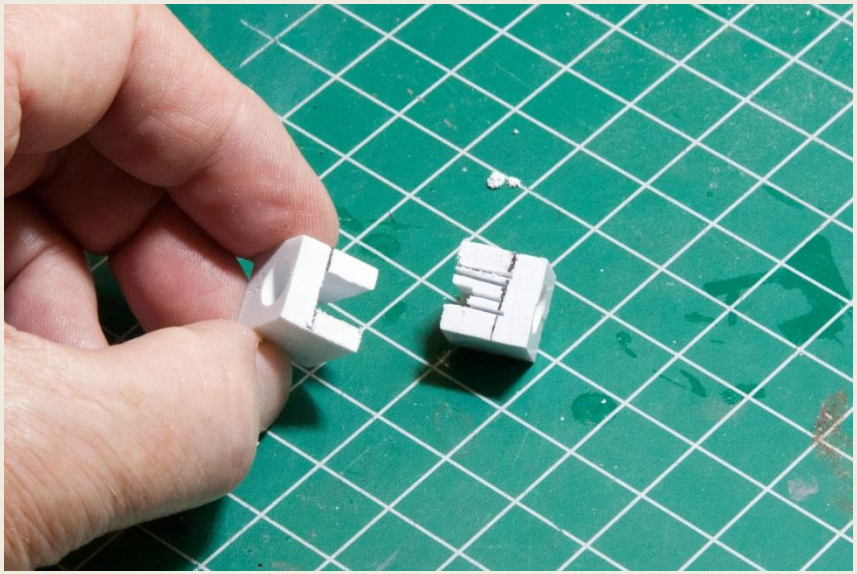
Sand Side to Fit Between Fenders



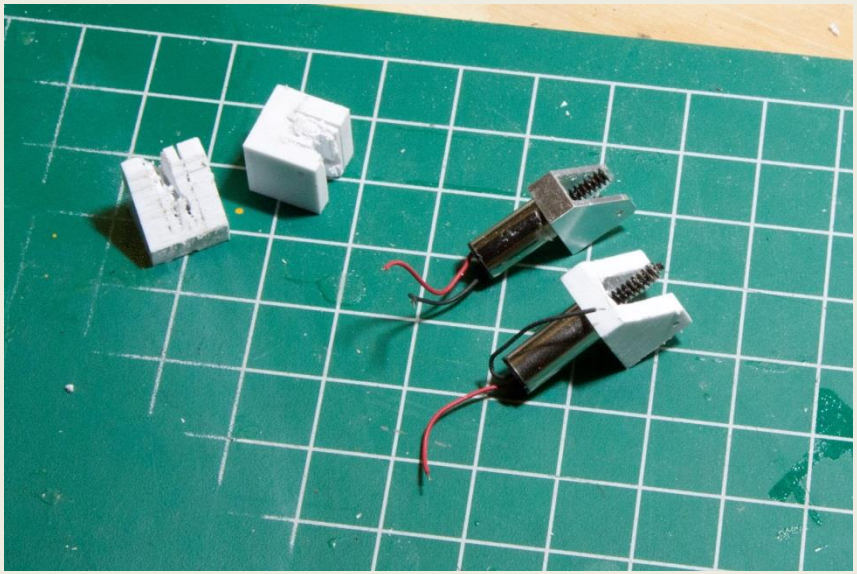
Making Room for the Worm and Axle Gear

The Final Result

Another View



The Result



Instructions

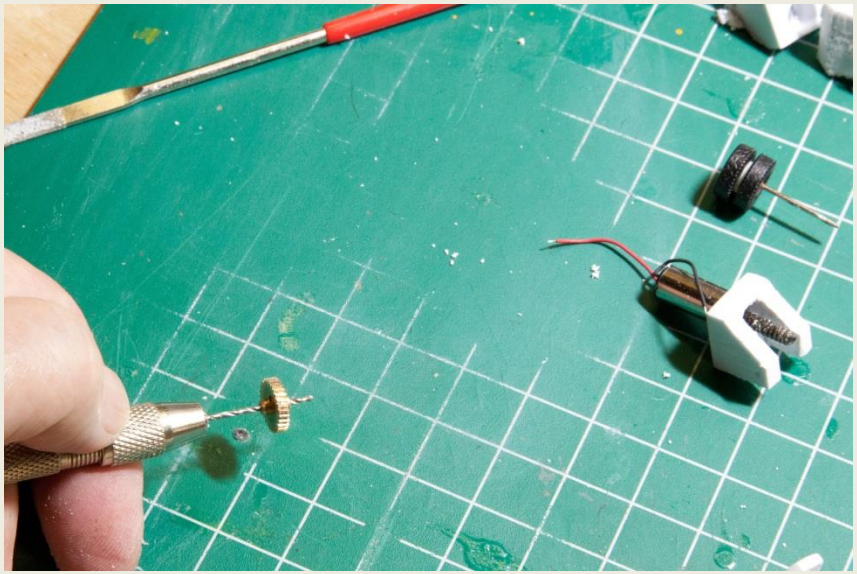
- **Using an Exacto knife, cut away the excess styrene where the motor worm and axle gear is housed. Do not open too much – the motor itself should not be able to enter the gear housing well.**
- **Using a file, smooth this area to accept the axle gear. The axle gear should not have too much play within the housing.**
- **Dry fit the axle gear using the short 1 mm diameter guide wire (which is in the kit).**
- **Sand the side walls of the motor housing to fit into the floor opening.**

Installing the Housing into the Floor Opening

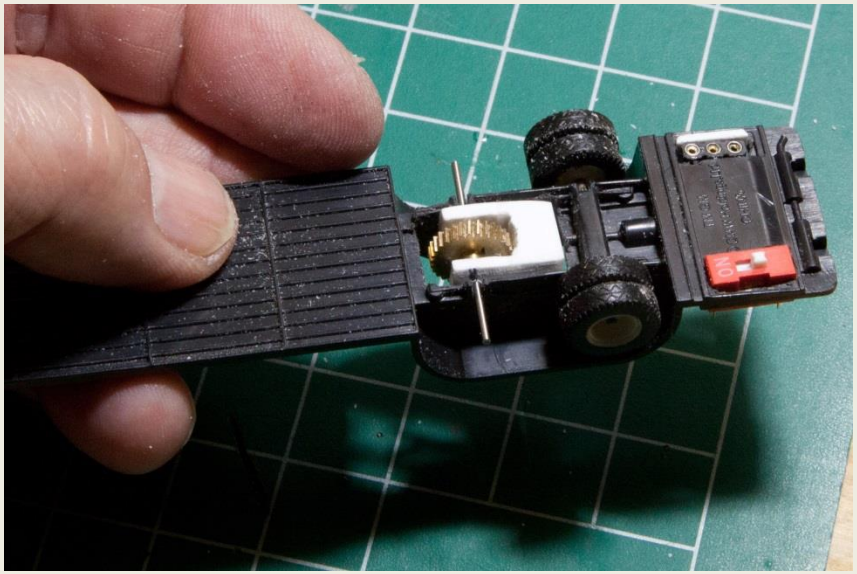
Section Three

Next -- Add the Axle Gear

Open Gear with 1 mm, #60 bit

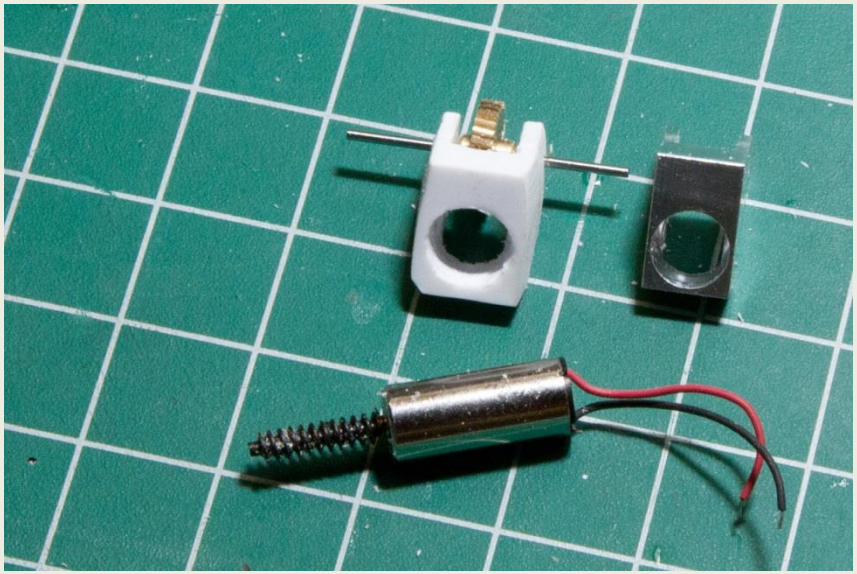


Axle Installed through Axle Gear

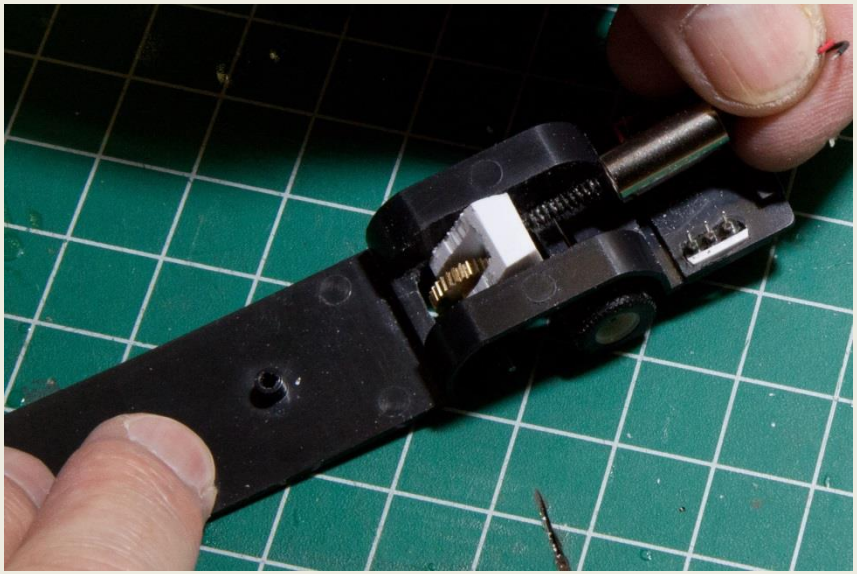


With Gear Added, Dry Fit the Styrene Into the Chassis

Sand on Each Side to Fit Between the Fenders



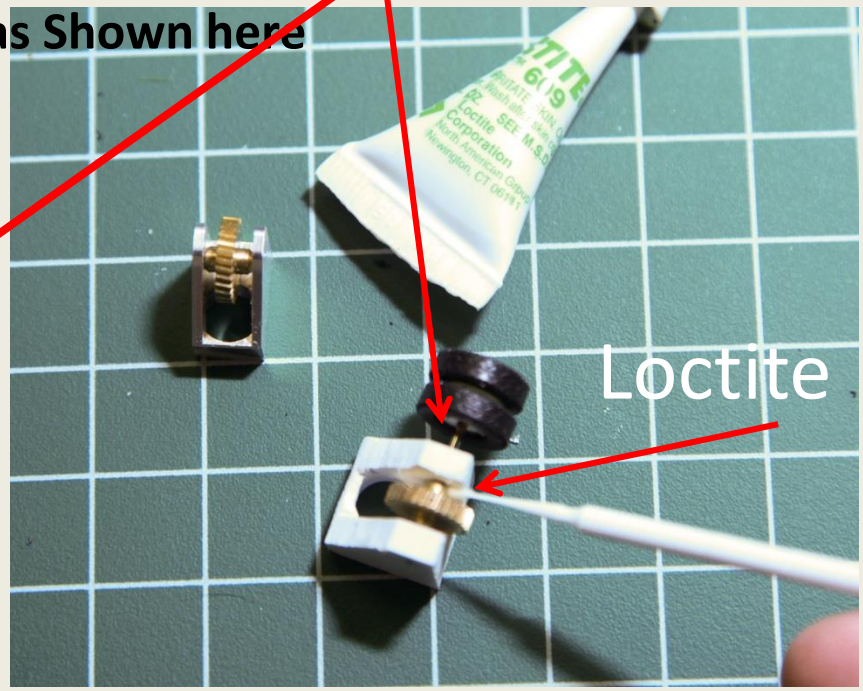
The Motor Goes in to 9/32 (7 mm) Opening



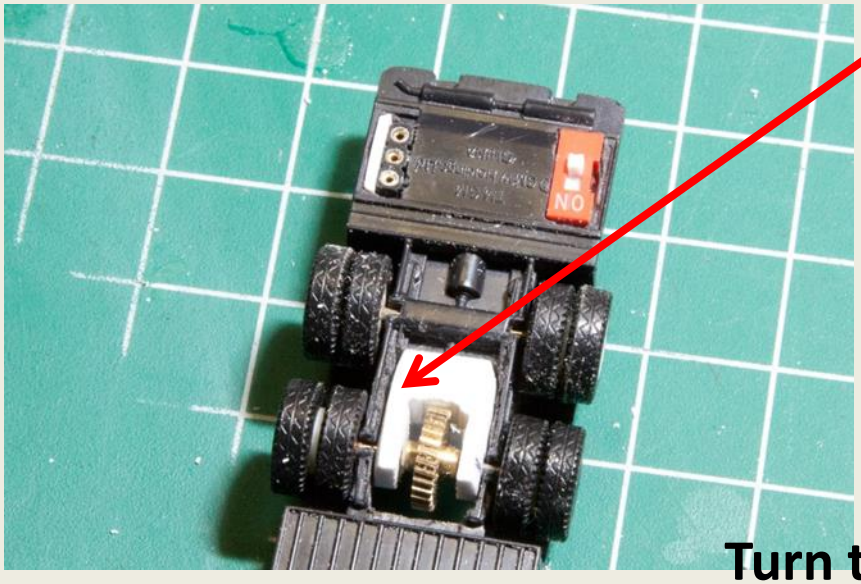
If is fits well and the Gear turns freely, next we Loctite it!

Loctite 609 --Binds the Shaft to the Gear Hole

Slide the Axle out slightly (leaving room for the wheel well side wall). Then Apply Loctite as Shown here

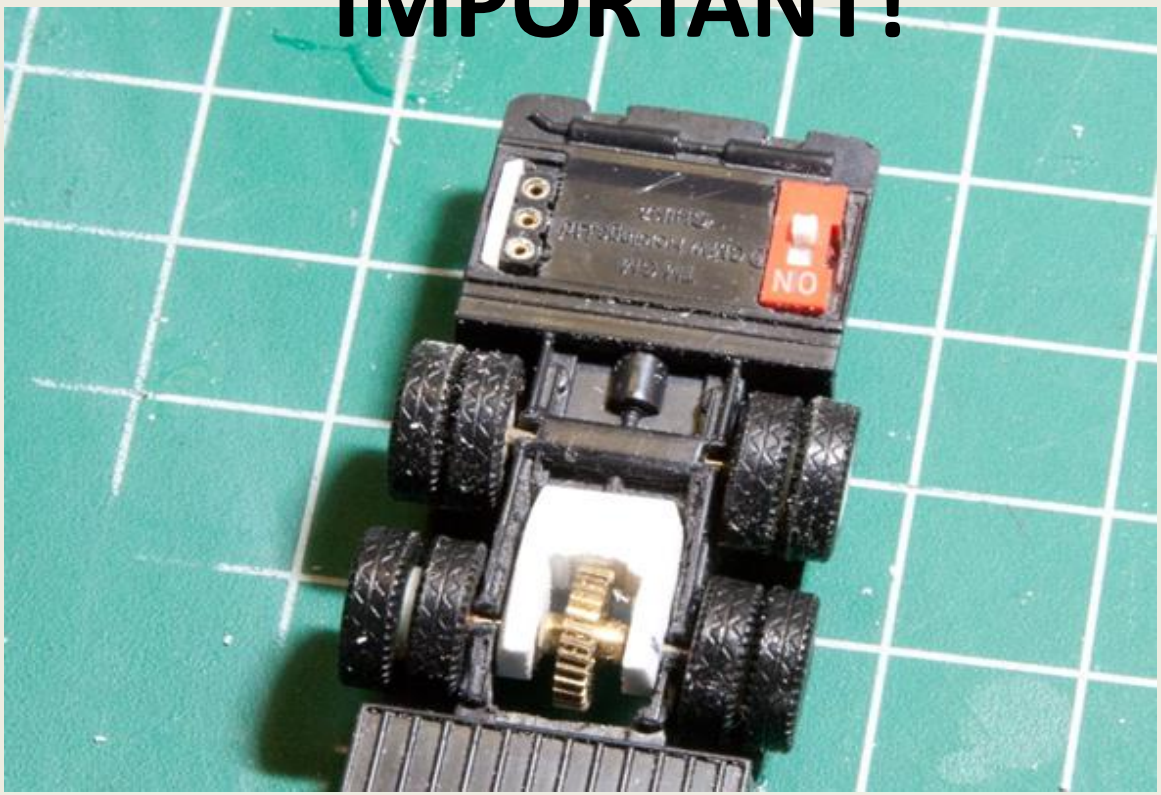


Insert the Motor Frame with a Wheel into the Opening we created in the Floor



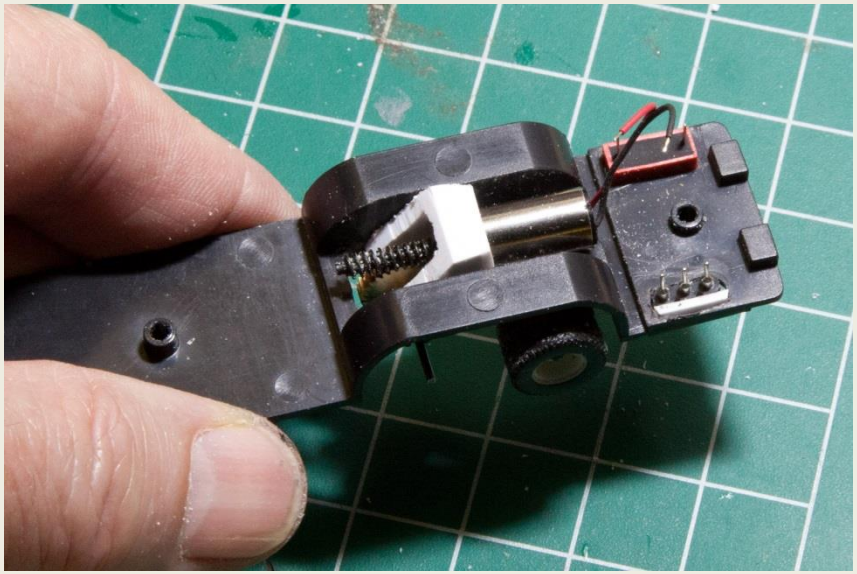
Turn the Wheel after a few seconds – make sure the Gear turns with the Wheel in the Styrene Frame.

IMPORTANT!

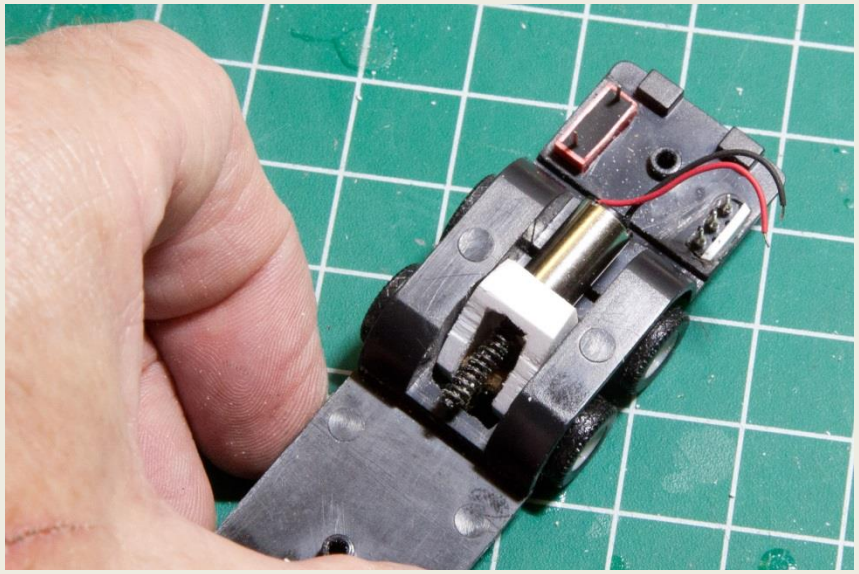


Keep Turning the Tires to Keep the Loctite from Gluing the Axle to the Styrene Frame.

Rear End without Wheels

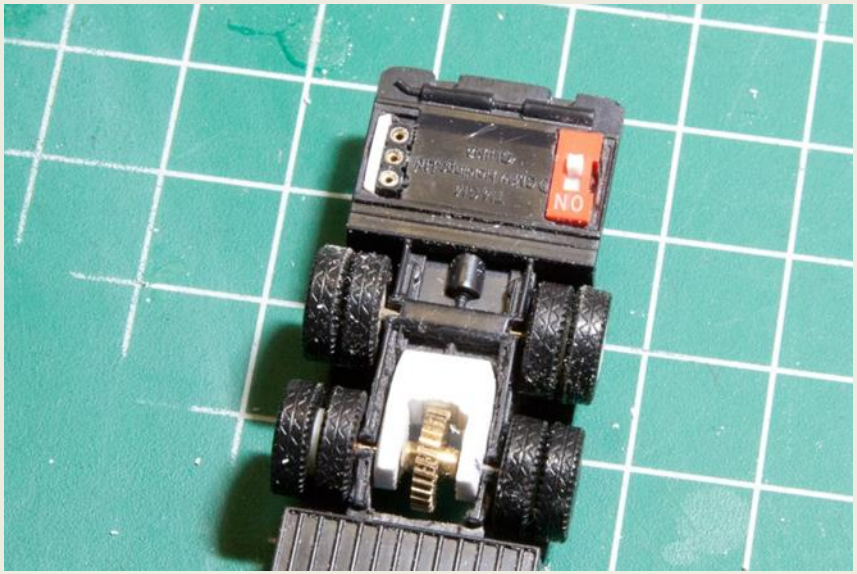


Rear End with Wheels

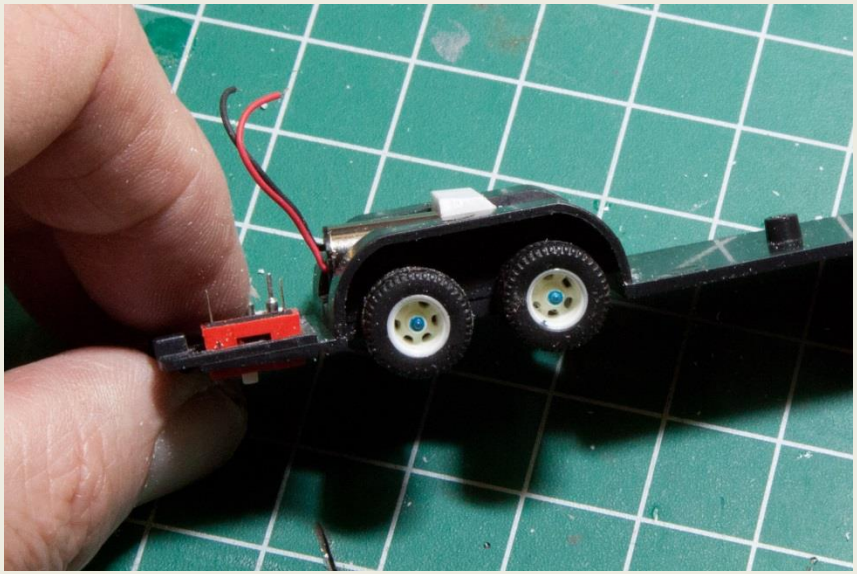


Rear End Complete

Test with a AA Battery for Freedom of Movement



Ready for Permanent Wiring Next



Front End Steering --- See Part II